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WATER ALOE WEEVIL *BAGOUS BINODULUS* (HERBST, 1795) (COLEOPTERA: CURCULIONIDAE) IN SERBIA

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Abstract

Bagous binodulus (Herbst, 1795) is recorded in Serbia for the first time. Several specimens were collected in the Zasavica Special Nature Reserve near Sremska Mitrovica. General information about this weevil species, including remarks about its potential distribution in Serbia, is given.

KEY WORDS: *Bagous binodulus*, Curculionidae, Serbia

Introduction

Bagous Germar, 1817 is one of several hygro- and hydrophilous weevil genera and includes more than 250 valid species distributed worldwide, of which 130 have been recorded from the Palearctic zone (Dieckmann 1983, Caldara & O'Brien, 1998). The adults of this genus are predominantly tiny, rarely medium-sized beetles (1.2-8.9 mm in length), often with waterproof coating composed of dense granular or pitted scales. Their development is closely connected with wet habitats, i.e. plants growing in lakes, ponds, old riverbeds, wet meadows and the undergrowth of floodplain forests (Burakowski *et al.*, 1995). Most of the *Bagous* species are monophagous or oligophagous and feed on water plants or helophytes (Skuhrovec *et al.*, 2011). These beetles are mainly considered as rare, stenotopic species, often endangered (Sprick, 2001).

In Serbia, representatives of the genus *Bagous* have been recorded only sporadically (Pešić, 2000, 2002, 2004, 2006, 2007; Mesaroš, 2011-2015). According to Skuhrovec *et al.* (2011), out of 38 transalpine *Bagous* species 16 can be found in Serbia. In the Fauna Europaea database, Caldara (2013a) presents 13 out of 63 European species for Serbia and Montenegro and the same author indicates the presence of 12 species in Serbia (Caldara, 2013b).

Although members of the *Bagous* species are generally hard for identification, *Bagous binodulus* has some easily recognizable features that prevent misidentification (Skuhrovec *et al.*, 2011). The fifth elytral interval at the apical part and third interval at the antedeclyvital part possess a strong callus (Fig. 1). The tibiae along the inner surface are indistinctly denticulate, unarmed.

Bagous binodulus (Herbst, 1795) lives exclusively on water aloe (Skuhrovec *et al.*, 2011). Water aloe (*Stratiotes aloides* L.), also known as water soldier or water pineapple, is an aquatic plant with serrated leaves that lives partly submerged in standing or slow-moving freshwaters all over the Palearctic region (Cook, 1998). Imago and larvae feed on parts of the plant above the water surface. Larvae were observed swimming from plant to plant with a curling movement, and pupae were found hidden between leaves (Urban 1923). Detailed and illustrated descriptions of the larval instars were published by Gosik (2010).

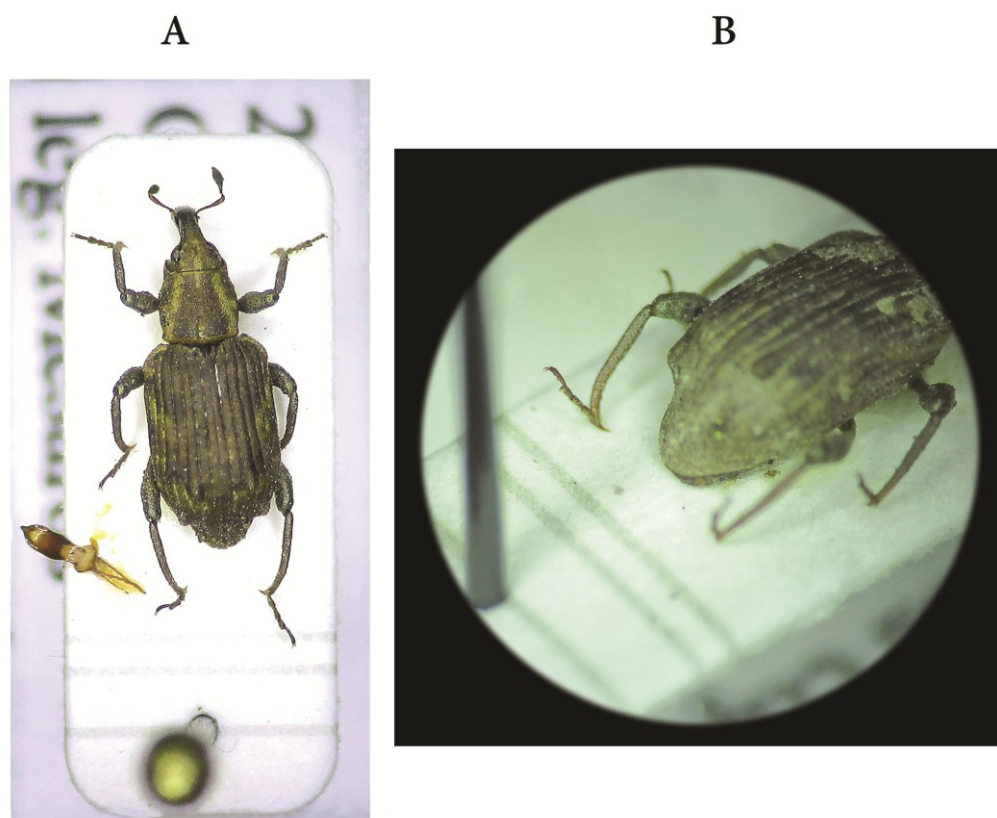


Figure 1. Adult male of *Bagous binodulus* (Herbst, 1795). A. Complete habitus; B. Top of elytra detail.

Material and Methods

During 2011 and 2012, a thorough investigation of aquatic Adephaga of the Zasavica Nature Reserve was carried out. Several nonselective methods for collecting water beetles were used: aquatic nets, UV lamps and extraction of beetles by Tullgren funnel from detritus sieved at the shore zone (Mesaroš & Stanković,

2012). In the collected samples we found a number of aquatic Polyphaga, including representatives of the genus *Bagous*.

For identification of the collected specimens, the relevant keys for identification were consulted (Sebő, 1971; Smreczyński 1972; Dieckmann, 1983; and Skuhrovec *et al.*, 2011).

Results and Discussion

During the research, a total of one male and two females of *Bagous binodulus* were found. As a monophagous species that directly depends on water aloe, this finding was to be expected. Water aloe is widely distributed and well known from the Zasavica area (Vukov *et al.*, 2004; Stanković, 2011; Vukov *et al.*, 2012).

All specimens were extracted from sieved detritus collected on June 21, 2012 at the locality Gajića Ćuprija (UTM CQ87). The specimens were mounted on paper cards and stored in the author's private collection.

Skuhrovec *et al.* (2011) pointed out that *Bagous binodulus* is "...predominantly found in the north in the southern parts of Sweden, the Baltic States and western Russia. In the south, it can be found only in northern Italy and is absent from the Balkans...". Finding this species in Serbia significantly expands its distribution area to southeastern Europe (Fig. 2).

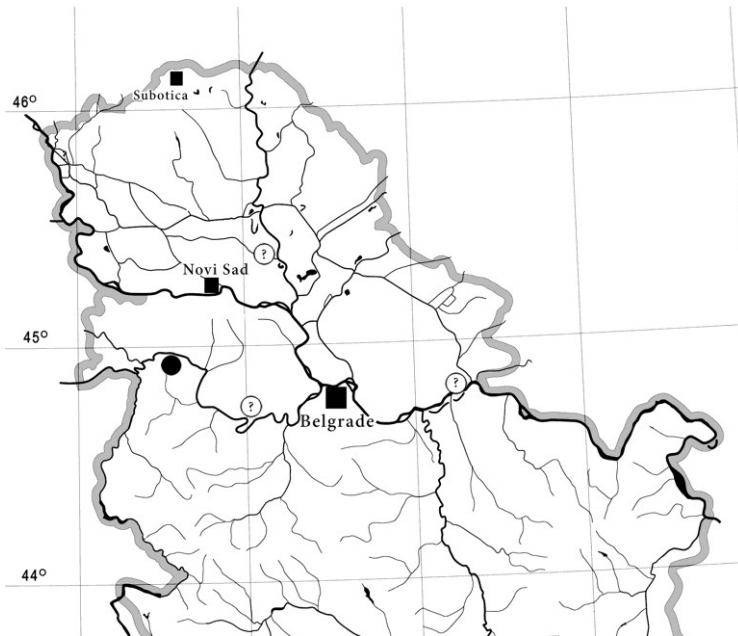


Figure 2. Proven (black dot) and expected occurrences (circles with question mark) of *Bagous binodulus* (Herbst, 1795) in Serbia.

Flight of the *Bagous binodulus* has never been observed (Skuhrovec *et al.*, 2011) and its dispersion most probably depends exclusively on inundation processes. To predict the possible distribution of this species in Serbia, we could analyze the distribution of its host plant. A recent study (Vukov *et al.*, 2004) revealed that the historic distribution of water aloe along the inundation zone of the Danube, Tisa and Sava rivers was recently reduced to only several viable local populations on the Danube and Sava. It is probable that *Bagous binodulus* (Fig. 2) will be found at these localities in future.

Due to its specific biology, the water-aloe weevil is potentially an attractive target for conservation efforts. It was proposed as a species in the Habitats Directive of the EU (Sprick, 2001) and several European countries have placed this species on their regional and national red lists (Sprick *et al.*, 2003; Schneider & Gruschwitz, 2004; Bayer & Winkelmann, 2005; Benedikt & Strejček, 2005). In Serbia, this species has not yet been evaluated in terms of nature conservation.

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ВРСТА *BAGOUS BINODULUS* (HERBST, 1795) (COLEOPTERA: CURCULIONIDAE) У СРБИЈИ

ГАБОР МЕСАРОШ

Извод

У раду је приказан први налаз *Bagous binodulus* (Herbst, 1795) у Србији на основу јединки прикупљених на подручју специјалног резервата природе Засавица. Ова врста је до сада била позната из више земаља западне, централне и источне Европе и северне Азије и овим радом се познавање њеног ареала распрострањења проширује на подручје југоисточне Европе. У раду су представљене основне информације о биологији *Bagous binodulus*, као облигатне монофаге на биљци водена алоја (*Stratiotes aloides* L.), и потенцијално распрострање у Србији је коментарисано са аспекта тренутног познавања распрострањења њене биљке хранитељке.

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